REMARKS

Applicants thank the Patent Office for the careful attention accorded this Application and respectfully requests consideration of the Amendment above and remarks set forth below.

In response to the Office Action dated June 28, 2005, Applicants have cancelled Claims 17-34 without prejudice or disclaimer and have added rewritten Claims 35-62 in order to more clearly define the present invention over the prior art of record. Applicants reserve the right to file one or more continuation applications based on the canceled claims.

Applicants request additional time to prepare formalized drawings that eliminate the dark shading objected to by the draftsperson, and in the meantime, submit herewith Fifty Two (52) sheets of Replacement Drawings. Applicants will file Formal Drawings under a separate cover.

Applicants also submit under separate cover, a Supplemental Information Disclosure Statement (SIDS) to disclose prior art cited in a corresponding PCT Application.

In the rewritten Claims 35-48, Applicants' clearly claim an improved FSO laser communication system employing a unique combination of techniques for stabilizing the intensity of the received FSO laser beam carrier signal, namely:

(i) a fast steering mirror (FSM), a multi-segment signal detector and processor for automatically tracking or following a maximum intensity laser beam speckle in the FSO laser beam carrier signal, and moving away from low intensity (i.e. black) laser beam speckles appearing in the FSO laser beam carrier signal and that might fall onto the receiving optical fiber, and thereby achieving a first level of optical signal intensity stabilization at the single-cell signal detector in the receiver module; and

(ii) a spatial modulator for spatially modulating the FSO laser beam carrier signal, and a processor analyzing electrical signals produced by the single-cell signal detector, controlling the spatial modulator, and spatially modulating the FSO laser beam carrier signal so as to lock a maximum intensity speckle appearing in the received FSO laser beam carrier signal, onto the

receiving optical fiber, and thereby achieving a second level of optical signal intensity stabilization at the single-cell signal detector in the receiver module.

In Claims 49-62, Applicants' define a novel method of signal intensity stabilization within the receiver modules of communication terminals in a FSO laser communication system, also employing a unique combination of signal intensity stabilization techniques, generally described in claim 31.

Notably, while the first signal intensity stabilization technique (i) effectively eliminates the long tail of low power fades seen in the raw data in FSO laser communication systems, the second signal intensity stabilization techniques (ii) effectively mitigates against deep fading in FSO laser communication systems, as described in the present Patent Specification.

Also, while the second technique uses a spatial modulator, the claimed invention defined by the rewritten Claims does not employ wavefront sensing (WS) techniques, as used in many prior art AO-based compensation systems typically designed to produce a near diffraction limited spot after passage through a turbulent atmosphere.

As recited in rewritten Claims 35-48, none of the prior art references disclose, teach or suggest a FSO laser communication system comprising:

(i) a fast steering mirror (FSM), a multi-segment signal detector and processor for processing electrical signals produced by the multi-segment signal detector, controlling the FSM, and automatically tracking or following a maximum intensity laser beam speckle in the FSO laser beam carrier signal, and moving away from low intensity (i.e. black) laser beam speckles appearing in the FSO laser beam carrier signal and that might fall onto the receiving optical fiber, and thereby achieving a first level of optical signal intensity stabilization at the single-cell signal detector in the receiver module; and

(ii) a spatial modulator for spatially modulating the FSO laser beam carrier signal, and a processor analyzing electrical signals produced by the single-cell signal detector, controlling the spatial modulator, and spatially modulating the FSO laser beam carrier signal so as to lock a maximum intensity speckle appearing in the received FSO laser beam carrier signal, onto the

receiving optical fiber, and thereby achieving a second level of optical signal intensity stabilization at the single-cell signal detector in the receiver module.

Also, none of the prior art references alone or in combination with each other, disclose, teach or suggest, as recited in rewritten Claims 49-62, the method of automatically stabilizing variations in the detected intensity of free-space optical (FSO) laser beam carrier signals caused by atmospheric turbulence in a free-space optical (FSO) laser communication system, employing the use of a beam splitter, a FSM, multi-segment signal detector, spatial modulator and processor, as claimed.

While US Patent No. 4,123,651 discloses in Col. 4, at lines 46-68, the use of speckle tracking in a laser radar system, so as to ensure a speckle maximum will always be in the receiver aperture, and minimized fluctuations in the received signal to improve SNR of the received signal, this prior art reference, alone or in combination with other prior art references, fails to disclose, teach or suggest the use of use of a beam splitter, a FSM, multi-segment signal detector, spatial modulator and processor in a FSO laser communication system, so as to achieve the dual stages of signal intensity stabilization, as claimed.

Also, US Patent Publication No. 2005/0069325 to Cicchiello while disclosing a three-tier ultra-fine steering capabilities in a FSO communication system, this prior art reference, alone or in combination with other prior art references, also fails to disclose, teach or suggest the use of use of a beam splitter, a FSM, multi-segment signal detector, spatial modulator and processor in a FSO laser communication system, so as to achieve the dual stages of signal intensity stabilization, as claimed.

In view therefore, of the Amendment and Remarks set forth above, the present invention defined by rewritten Claims 35-62 is firmly believed to be neither anticipated by, nor rendered obvious in view of the prior art of record, and that the present application is now in condition for allowance.

Favorable action is earnestly solicited.

After amendment, two (2) independent claims and twenty eight (28) claims in all remain. Enclosed in payment of the excess claims fee of $400 (for eight additional claims in all) is Thomas J. Perkowski, Esq., P.C. Check No. 6559.

The Commissioner is also hereby authorized to charge any fee deficiencies or to credit any overpayments to Deposit Account No. 16-1340. A copy of this page is enclosed herewith.

Respectfully submitted,

Dated: July 10, 2007

Thomas J Perkowski, Esq.
Attorney for Applicants
Reg. No. 33,134
Thomas J. Perkowski, Esq., P.C.
Soundview Plaza
1266 East Main Street
Stamford, Connecticut 06902
203-357-1950
http://www.tjpatlaw.com

Certificate of Mailing under
37 C.F.R. 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service on July 10, 2007, in a Postage Prepaid envelope as, First Class Mail, addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Thomas J Perkowski, Esq.
Date: July 10, 2007

After amendment, two (2) independent claims and twenty eight (28) claims in all remain. Enclosed in payment of the excess claims fee of $400 (for eight additional claims in all) is Thomas J. Perkowski, Esq., P.C. Check No. 6559.

The Commissioner is also hereby authorized to charge any fee deficiencies or to credit any overpayments to Deposit Account No. 16-1340. A copy of this page is enclosed herewith.

Respectfully submitted,

Dated: July 10, 2007

Thomas J Perkowski, Esq.
Attorney for Applicants
Reg. No. 33,134
Thomas J. Perkowski, Esq., P.C.
Soundview Plaza
1266 East Main Street
Stamford, Connecticut 06902
203-357-1950
http://www.tjpatlaw.com

Certificate of Mailing under
37 C.F.R. 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service on July 10, 2007, in a Postage Prepaid envelope as, First Class Mail, addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Thomas J Perkowski, Esq.
Date: July 10, 2007